

CLAIMS

1. A receiver comprising a detector of which characteristic values are varied by adjusting a capacitance value, characterized in that:

the detector comprises a variable capacitance circuit formed on a semiconductor substrate and a resonance circuit composed of an inductor and a first capacitor formed outside the semiconductor substrate; and

the characteristic values of the detector are adjustable by varying the capacitance value of the variable capacitance circuit.

2. The receiver according to claim 1, characterized in that the variable capacitance circuit comprises a plurality of second capacitors and switches for having each of the second capacitors combined and connected in parallel.

3. The receiver according to claim 2, characterized in that each of the plurality of second capacitors has a different capacitance from one another.

4. The receiver according to claim 2, characterized in that each of the plurality of second capacitors is set at twice the capacitance mutually.

5. The receiver according to claim 2, characterized in that the variable capacitance circuit further comprises a storage unit for storing data of the number of bits at least more than the number of switches and has a connection state of the switches set according to the values of the bits of the data stored in the storage unit.

6. The receiver according to claim 5, characterized by further comprising:

a nonvolatile memory holding the data corresponding to characteristic values of the detector for optimizing a receiving state measured in advance; and

a control unit for reading the data held in the memory and storing it in the storage unit before starting a receiving operation.

7. The receiver according to claim 6, characterized in that the control unit detects temperature of the detector and varies the contents of the data stored in the storage unit according to a variance of the temperature before starting the receiving operation.

8. The receiver according to claim 6, characterized in that the control unit detects a power supply voltage and varies the contents of the data stored in the storage unit according to the variance of the power supply voltage before starting the receiving operation.

9. The receiver according to claim 1, characterized in that the detector is a quadrature detector having a $\pi/2$ phase shifter comprised of the resonance circuit and variable capacitance circuit; and

the capacitance value of the variable capacitance circuit is variable and a phase shift amount of the $\pi/2$ phase shifter against an input signal is thereby accurately adjustable to $\pi/2$.

10. The receiver according to claim 1, characterized in that the semiconductor substrate has other component circuits formed thereon integrally with the variable capacitance circuit.

11. The receiver according to claim 1, characterized in that the circuits on the semiconductor substrate are formed by using a CMOS process or a MOS process.

12. An adjustment system for adjusting the receiver according to claim 1 to an optimal receiving state, characterized by comprising:

a signal generator for inputting a test signal to the receiver;

a measuring instrument for measuring the receiving state of the receiver; and

an adjusting apparatus for determining the receiving state of the receiver based on a measurement result of the measuring instrument and switching a connection state of the plurality of second capacitors included in the variable capacitance circuit so as to optimize the receiving state.

13. An adjustment system for adjusting the receiver according to claim 6 to an optimal receiving state, characterized by comprising:

a signal generator for inputting a test signal to the receiver;

a measuring instrument for measuring the receiving state of the receiver; and

a controlling apparatus for determining the receiving state of the receiver based on the measurement result of the measuring instrument and determining the data to be stored in the storage unit and writing the data to the memory so as to optimize the receiving state.

14. An adjustment method for adjusting the receiver according to claim 1 to an optimal receiving state, characterized by comprising steps of:

inputting a test signal to the receiver;

measuring the receiving state of the receiver; and

determining the receiving state of the receiver based on the measurement result of the receiving state of the receiver and switching a connection state of the plurality of second

capacitors included in the variable capacitance circuit so as to optimize the receiving state.

15. An adjustment method for adjusting the receiver according to claim 6 to an optimal receiving state, characterized by comprising the steps of:

inputting a test signal to the receiver;
measuring the receiving state of the receiver; and
determining the receiving state of the receiver based on the measurement result of the receiving state of the receiver,
determining the data to be stored in the storage unit and writing the data to the memory so as to optimize the receiving state.